

WHAT IS CLAIMED IS:

1. An electric vacuum cleaner, comprising:

a motor-driven blower driven with a DC power supply as a drive source;

voltage converting means which boosts a voltage outputted from the DC power supply and supplies power to the motor-driven blower;

load detecting means which detects a state of a load applied to the motor-driven blower;

memory means which stores therein such a relation as to reduce a variation in dust suction capability with respect to a relationship between the state of the load on the motor-driven blower and the output voltage to be boosted by the voltage converting means; and

electric vacuum cleaner control means which refers to the relation stored in the memory means, determines an output voltage to be boosted by the voltage converting means from the state of the load on the motor-driven blower and controls the output voltage of the voltage converting means based on the result of said determination.

2. The electric vacuum cleaner according to claim 1, wherein the load detecting means detects the state of a load on the motor-driven blower by detecting an airflow in the electric vacuum cleaner.

3. The electric vacuum cleaner according to claim 1, wherein the load detecting means detects the state of a load on the motor-driven blower by detecting a current that flows through the motor-driven blower.

4. The electric vacuum cleaner according to claim 1, further comprising:

an inlet body capable of communicating with a space brought to negative pressure by driving of the motor-driven blower and capable of being in contact with a surface to be cleaned; and

cleaned surface detecting means which determines contact or non-contact of the inlet body with the cleaned surface;

wherein when the cleaned surface detecting means determines that the inlet body is in contact with the cleaned surface, the electric vacuum cleaner control means increases a boost rate corresponding to a rate of an output voltage to an input voltage.

5. The electric vacuum cleaner according to claim 1, further comprising:

an inlet body capable of communicating with a space brought to negative pressure by driving of the motor-driven blower and capable of being in contact with a surface to be cleaned; and

cleaned surface detecting means which determines contact or non-contact of the inlet body with the cleaned surface;

wherein when the cleaned surface detecting means determines that the inlet body is not in contact with the cleaned surface, the electric vacuum cleaner control means deactivates the voltage converting means.

6. The electric vacuum cleaner according to claim 1, further comprising:

an inlet body capable of detachably communicating with a space brought to negative pressure by driving of the motor-driven blower and capable of being in contact with a surface to be cleaned; and

attachment/detachment detecting means which determines attachment or detachment of the inlet body from a main body of the electric vacuum cleaner;

wherein when the attachment/detachment detecting means determines that the inlet body has been detached from the space, the electric vacuum cleaner control means increases the output voltage of the DC power supply by means of the voltage converting means to thereby increase a boost rate corresponding to a rate of an output voltage to an input voltage.

7. The electric vacuum cleaner according to claim 6, wherein when the attachment/detachment detecting means

determines that the inlet body has been detached from the space, the electric vacuum cleaner control means fixes a proportion of a rise in the boost rate corresponding to a rate of an output voltage to an input voltage.

8. The electric vacuum cleaner according to claim 1, further comprising:

switching means which performs switching between a step-up operation mode for bringing the voltage converting means to an active state and a non step-up operation mode for bringing the voltage converting means to an inactive state; and

an operation mode switching controller which accepts an operation for selecting the operation modes for the electric vacuum cleaner;

wherein the electric vacuum cleaner control means controls the switching means in accordance with the operation accepted by the operation mode switching controller to thereby realize an operation mode associated with the operation of the operation mode switching controller.